



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,287	11/14/2001	Richard W. Strobel	01-651	3691

7590

12/18/2002

Barry L. Kelmachter
BACHMAN & LaPOINTE, P.C.
Suite 1201
900 Chapel Street
New Haven, CT 06510-2802

EXAMINER

ZIMMERMAN, JOHN J

ART UNIT

PAPER NUMBER

1775

03

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/991,287

Applicant(s)

STROBEL, RICHARD W. TG

Examiner

John J. Zimmerman

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-50 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

FIRST OFFICE ACTION

Information Disclosure Statement

1. The Information Disclosure Statement filed with this application has been considered.
An initialed form PTO-1449 is enclosed with this Office Action.

Claim Objections

2. Claim 18 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. It is not clear as to what further limitation is intended in claim 18 since all substrate materials must either be "ferrous based" or "non-ferrous based".

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1775

5. The claims are indefinite because each independent claim uses inconsistent language to describe the alloy composition. The use of "consisting" in conjunction with "balance essentially" is indefinite since these terms contradict each other. The term "consisting of" excludes any alloying element not specified therein, *In re Gray*, 11 USPQ 255 (CCPA 1931), and therefore the composition cannot have any other constituents. Applicant, however, has added "balance essentially" after the "consisting of" language and the "essentially" language appears to suggest that other constituents can be present. Furthermore, some of the dependent claims specifically add further constituents (e.g. claim 7) although the "consisting of" language of the independent claims prohibits further constituents from being present in the composition. Applicant must resolve these inconsistencies. [For purposes of claim interpretation in the ensuing rejections, the examiner has interpreted the claim compositions to be open language - instead of closed (consisting of) language. To interpret the language as closed would render unexaminable those dependent claims which recite additional constituents.]

6. The use of "effective amount" should be followed by the function (e.g. claims 7, 25 and 46). The phrase "an effective amount" has been held to be indefinite when the claim fails to state the function which is to be achieved, *In re Fredericksen* 213 F.2d 547, 102 USPQ 35 (CCPA 1954). [For the purposes of claim interpretation in the ensuing rejections, the claims reciting additional constituents "up to" 5%, are interpreted to read on zero amounts. The use of "up to" reads on zero amounts of those constituents and is to be interpreted as such, *In re Mochel*, 176 USPQ 194 (CCPA 1974). Although it is noted that these claims also recite a lower limit of "an

Art Unit: 1775

effective amount", there is no indication of what function is to be achieved by the additive and therefore no effective lower limit can be determined for the additional alloying constituents.]

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action.

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1-3, 5-11, 13-17, 20-22, 24-27, 30, 32-40 and 42-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Lupfer (U.S. Patent 3,503,721).

9. Lupfer discloses hot dipping copper based electrical components in a tin solder containing 2-10% silver (e.g. see column 2, lines 30-50; column 3, lines 2-5). Although Lupfer's preferred embodiment is a tin-silver eutectic having 3.5% silver which melts at 221 °C, the rest

Art Unit: 1775

of Lupfer's disclosed 2-10% silver range would be expected to melt at higher temperatures. The melting temperatures of the solder compositions in this range would be inherent to the various tin-silver compositions. In addition, the hardnesses of the solders would also be inherent to the disclosed tin-silver compositions. Regarding applicant's claims reciting additional constituents "up to" 5%, the use of "up to" reads on zero amounts of those constituents and is interpreted as such, *In re Mochel*, 176 USPQ 194 (CCPA 1974). Although it is noted that these claims also recite "an effective amount" of these additional constituents, there is no indication of the function is to be achieved and therefore no lower limit of those constituents can be determined in the claims.

10. Claims 1-18, 20-28 and 30-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Brinkmann (U.S. Patent 5,075,176).

11. Brinkmann discloses hot dipping strips for copper based electrical plug connectors in a tin solder containing up to 10% silver (e.g. see column 1, lines 45-54; column 2, lines 38-50; Examples 1 and 2; claims 1-4) in a thickness of 0.3-12 μm (\approx 0.00001-0.0005 inches). The melting temperatures of the solder compositions in this range would be inherent to the various tin-silver compositions. In addition, the hardnesses of the solders would also be inherent to the disclosed tin-silver compositions. Since Brinkman specifically singles out silver containing tin compositions in the examples and teaches endpoints directly in applicant's claimed ranges (e.g. see Examples and claim 4) and also teaches the addition of other constituents in applicant's

Art Unit: 1775

ranges which are disclosed by applicant as additives, Brinkmann teaches the compositions of the claims with sufficient specificity as to anticipate the rejected claims. See MPEP 2131.03.

12. Claims 1-5, 15-18, 20-24, 36-38 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Arai (U.S. Patent 5,902,472).

13. Arai '472 discloses plating substrates with a tin-silver composition (e.g. see Tables 1, 4, 12, 15, 17, 18). The melting temperatures of the solder compositions in examples would be inherent to the various tin-silver compositions. In addition, the hardnesses of the solders would also be inherent to the disclosed tin-silver compositions.

14. Claims 1-5, 7-18, 20-28, 30-31, 33-38 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Arai (U.S. Patent 5,948,235).

15. Arai '235 discloses plating substrates with tin-silver-copper compositions (e.g. see column 4, lines 54-59). The melting temperatures of the compositions in the examples would be inherent to the various tin-silver compositions. In addition, the hardnesses of the solders would also be inherent to the disclosed tin-silver compositions.

16. Claims 1-18, 20-28, 30-41, 46-47 and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Harada (Japanese publication 2000-080460).

17. Harada discloses plating substrates with a tin-silver-copper solder composition (e.g. see paragraph [0008]). The melting temperatures of the solder compositions in this range would be inherent to the various tin-silver compositions. In addition, the hardnesses of the solders would also be inherent to the disclosed tin-silver compositions.

18. Claims 1-5, 5-11, 13-18, 20-22, 24-28, 30 and 32-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Nishimura (U.S. Publication 2002/0134200).

19. Nishimura discloses plating substrates with a tin-silver-copper-nickel composition (e.g. see paragraph [0011]). The melting temperature of the solder composition would be inherent to the composition. In addition, the hardnesses of the solder would also be inherent to the disclosed composition.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claims 1-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brinkmann (U.S. Patent 5,075,176) in view of applicant's disclosure of the prior art.

Art Unit: 1775

22. Brinkmann discloses hot dipping copper based electrical plug connectors in a tin solder containing up to 10% silver (e.g. see column 1, lines 45-54; column 2, lines 38-50; Examples 1 and 2; claims 1-4) in a thickness of 0.3-12 μm (\approx 0.00001-0.0005 inches). The melting temperatures of the solder compositions in this range would be inherent to the various tin-silver compositions. In addition, the hardnesses of the solders would also be inherent to the disclosed tin-silver compositions. Regarding applicant's claims reciting additional constituents "up to" 5%, the use of "up to" reads on zero amounts of those constituents and is interpreted as such, *In re Mochel*, 176 USPQ 194 (CCPA 1974). Although it is noted that these claims also recite "an effective amount" of these additional constituents, there is no indication of the function is to be achieved and therefore no lower limit of those constituents can be determined in the claims. In any event, Brinkmann clearly teaches that additional constituents (including those from applicant's Markush group of additional constituents) can be added. The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to select the portion of the prior art's range which is within the range of applicant's claims because it has been held to be obvious to select a value in a known range by optimization for the best results, see *In re Aller, et al.*, 105 U.S.P.Q. 233. The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 USPQ 549.

Art Unit: 1775

23. Regarding claims to specific substrate materials (e.g. claims 19, 29), applicant's disclosure (e.g. page 7, lines 6-11) shows copper-tellurium to be a typical composition for automobile connectors in the prior art and therefore the use of typical connector substrate compositions for the connectors of Brinkmann would have been obvious to one of ordinary skill in the art at the time the invention was made because Brinkmann's invention would be understood to apply to proven connector substrate compositions. It is axiomatic that consideration of the prior art cited by the examiner must, of necessity, include consideration of the admitted state of the art found in applicant's specification, *In re Davis*, 305 F.2d 501, 134 USPQ 256 (CCPA 1962); *In re Hedges*, 783 F.2d 1038, 228 USPQ 685 (Fed. Cir. 1986). Admitted knowledge in the prior art may be used in determining patentability of the claimed subject matter, *In re Nomiya*, 509 F.2d 566, 184 USPQ 607 (CCPA 1975). Regarding claims specific to batch and/or continuous dipping processes, the reference specifically discloses that dipping processes should be used and selecting batch, semicontinuous or continuous processes to apply the coating is a mere matter of determining which process works more economically for the amount of material to be coated. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the coating process for scale of the coating operation. A review of the applicant's disclosure shows no patentable distinction in selecting any of these conventional dipping processes and barring evidence to the contrary, using a batch, a semicontinuous or a continuous process is not seen to be a patentable distinction over the teachings of Brinkmann. In addition, optimizing the bath dwell time for the type of hot dipping process (e.g. claim 44) would be within the level of ordinary skill in the art and using lubricants

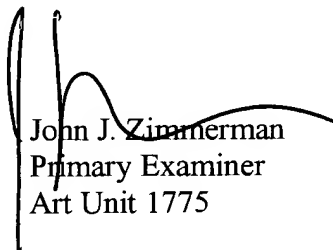
Art Unit: 1775

(e.g. claim 45) to facilitate forming of the articles from the hot dipped stock would be understood to be conventional in this field of manufacture.

Conclusion

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (703) 308-2512. The examiner can normally be reached on 8:30am-5:00pm, M-F. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


John J. Zimmerman
Primary Examiner
Art Unit 1775

jjz
December 15, 2002